THE PURSE AND THE NEEDLE OPERATION OF THE MARINE CORPS CLOTHING AND EQUIPMENT FACTORY UNDER THE NAVY INDUSTRIAL FUND

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The
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THE PURSE AND THE NEEDLE

OPERATION OF THE

MARINE CORPS CLOTHING AND EQUIPMENT FACTORY

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TABLE OF CONTENTS

INTRODUCTION

In one of the most revolutionary changes in military budgeting and accounting systems in recent history, Section 405 of the National Security Act Amendments of 1949[1] required the establishment of working capital funds to finance the operations of commercial-type and industrial-type activities within the Department of Defense.

The Act further provided that such activities provide common services within or among the departments and agencies of the Department of Defense.

The purpose of this paper will be to describe how this requirement has been fulfilled by the only industrial-type activity presently operating within the Marine Corps - the Marine Corps Clothing and Equipment Factory (which will be hereinafter referred to simply as the Clothing Factory).

The organization and operation of the Clothing Factory is perhaps typical of industrial funds in general, and the fact that the factory is engaged in only a single line of industry rather than a hodge-podge of various tasks makes the development and explanation of the subject nearly as ideal as what might

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[1] U. S. Congress, National Security Act Amendments, Public Law 216, 81st Cong., 2d Sess., 1949, Section 405, Title IV.

be termed a "textbook case".

The Clothing Factory is located at the Marine Corps Supply Activity, Philadelphia, Pennsylvania, an activity which has historically held an important place in the logistic support of the Marine Corps.

The Marine Corps was originally organized at Tun Tavern, Philadelphia, in 1798 and shortly thereafter the first supply activity was set up in that city in a large tent. The first quartermaster was Lieutenant Franklin Wharton, who later became Commandant of the Marine Corps.

When the nation's capital was moved to Washington, D.C., in 1800, Commandant Wharton determined that both the Marine Corps' headquarters and its supply depot would remain at Philadelphia. While a later Commandant and his headquarters finally moved to Washington early in the Twentieth Century, the keystone of the Marine Corps supply system has always remained firmly seated in Philadelphia.

The present physical plant of the Marine Corps Supply Activity was for the most part acquired during the World War II period when its peak of activity was reached. Since the Korean conflict, however, the scope of operations of the Activity has been radically changed with the transfer of the major supply functions to Marine Corps Supply Centers at Albany, Georgia, and Barstow, California.

But the Supply Activity continued to perform certain important logistic and supply coordination activities at the

Philadelphia location, as well as continuing to operate the Clothing Factory. (The Clothing Factory itself had been established during the Civil War to provide uniforms for a force of 2300 Marines.)

CHAPTER I

MISSION AND ORGANIZATION

The present mission of the Marine Corps Supply Activity is to "... procure and/or manufacture, store and distribute items of clothing, textiles and footwear ... procure, stock and distribute Navy and Marine Corps publicity and recruiting media ... and Marine Corps publications ... serve as cataloging office and supply inventory control point for all Marine Corps spare parts, for selected minor end items of a consumable or non-support nature and for clothing, textile and footwear items."[2]

The Supply Activity is organized into eight operating divisions, three general staff offices and a headquarters section. Responsibilities are assigned to divisions generally on a functional basis. The Industrial Division operates the Clothing Factory which manufactures items of clothing and equipment as may be directed by the Quartermaster General of the Marine Corps or as requested by the Military Clothing and Textile Supply Agency. (This latter agency is operated by the U. S. Army and is the organization which has been assigned by the Secretary of

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[2] Organization of the Marine Corps Supply Activity, Marine Corps Supply Activity, Activity Order 5450.7 (Philadelphia, U. S. Marine Corps, 1 November 1956). Hereafter, this document will be referred to as Activity Order 5450.7.

Defense the "single manager" responsibility for procurement, stockage and distribution of all major inventories of clothing and textile items in support of all components of the Department of Defense). This Agency, which will be hereinafter referred to as the Single Manager, is also located in Philadelphia.

Organization charts of the Marine Corps Supply Activity and of the Industrial Division are included as appendices I and II.

CHAPTER II

DEVELOPMENT AND PURPOSES OF THE NAVY INDUSTRIAL FUND

In compliance with the provisions of Public Law 216 previously cited, the Secretary of Defense, on 13 July 1950, issued regulations covering the operation of industrial funds.[3]

The purposes of these funds were stated as follows: "... to provide a more effective means for controlling the costs of goods and services produced by industrial-type establishments and a more effective means for financing, budgeting and accounting for such operations."[4]

In addition, industrial funds were intended (1) to make ordering agencies more critical of prices, quality and delivery speed in orders placed upon Defense Department suppliers; (2) to enable industrial-type establishments to discharge their responsibilities more effectively; (3) to permit more complete establishment of performance-type budgeting and accounting throughout the armed services; and (4) to promote more cross-servicing between military departments.[5]

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[3] U. S., Department of Defense, Regulations Covering the Operation of Working-Capital Funds for Industrial - and Commercial-Type Establishments (Washington: U. S. Government Printing Office, 13 July 1950). Hereafter, this document will be referred to as Industrial Fund Regulations.

[4] Ibid.

[5] Ibid.

The Department of Defense has recently embarked upon an intensified Industrial Fund Improvement Program which further defines the basic objectives of industrial funds as follows:

"1. To require alert, forward-looking financial planning and control.

"2. To impel managers to control costs in line with work loads actually generated by customers' orders.

"3. To coordinate the financial aspects of detailed estimating and planning for job performance in terms of material requirements and labor operations, production scheduling and control, and procurement and inventory control, with budgeting and cost control.

"4. To provide a more effective and flexible means of financing, budgeting and accounting for costs.

"5. To establish and use realistic cost standards wherever feasible as controlling targets rather than detailed cost limitations.

"6. To provide greater authority and financial flexibility to managers of activities.

"7. To create and recognize 'buyer-seller' relationships between funded ordering agencies and producing activities.

"8. To provide meaningful bills to ordering agencies to enable them to budget and account on an

'end-product' basis (the same as when ordering from commercial contractors), simplifying budget presentations, budgetary control, and accounting procedures of both producers and customers.

"9. To establish, wherever feasible, predetermined sales prices.

"10. To encourage more cross-servicing among the military departments and among their operating agencies, with the aim of obtaining more economical use of facilities.

"11. To establish one uniform financial management system for all activities of the same category."[6]

The intent of the foregoing objectives is to provide advantages for both the producer and the consumer through creation of a "buyer-seller" relationship between the industrial activities and the operating units ultimately purchasing the goods with their normal maintenance and operation funds.

Producing activities benefit from the fact that this relationship gives them greater management authority and financial flexibility. In turn they will be under greater pressure for lower costs and better quality and service, especially since they will be, to a certain extent, in competition with "outside" suppliers.

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[6]U. S., Department of Defense, Memorandum for the Assistant Secretary of the Navy (FM). Office of the Assistant Secretary of Defense, 22 July 1957.

Customers benefit from the fact that their costs are more likely to be kept in line, and they achieve greater flexibility in choosing sources of supply as well as simplified budgeting and accounting procedures.[7]

The concept of constantly increasing the utilization of working-capital and revolving type funds for financing industrial-commercial activities is inherent in the Navy's overall financial plan. Results of this emphasis have been most gratifying ever since the initial conversion, in 1949, of the Defense Printing Service to industrial funding.

The Navy Industrial Fund now amounts to a mammoth "holding company" operating 12 shipyards, 6 ordnance plants, 18 printing plants, 2 research and development centers, the Marine Corps Clothing Factory and the Military Sea Transportation Service - a combination doing an annual business of about $1,358,200,000. In order to promote maximum effectiveness, efficiency and economy in the operation of these many businesses, the Navy has found it expedient to adopt business methods similar to those in use in comparable civilian commercial enterprises.

Through use of the industrial funding concept, it has become possible also to simplify the funding of these operations and to further facilitate cross-servicing to other governmental

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[7]U. S., Department of Defense, A Program for Improving Financial Management in the Department of Defense. Text of a lecture presented at various dates and to various audiences.

agencies both within and outside the Defense Department.

The Navy Industrial Fund as a whole operates on a corpus composed of congressional allocations of the unexpended balances of a number of expired appropriations. The principal of the fund consists of approximately a half billion dollars of which about $280 million has been allocated as initial working capital to various operating activities.

Each local industrial fund application is governed by an individual charter, approved by the Navy Comptroller for the Secretary of the Navy. An activity is normally given an initial working capital allocation consisting of a cash account with the U. S. Treasury plus an initial inventory of materials and supplies. These local funds also must recognize as an initial liability the accrued leave balance of their civilian employees.

This working capital is used to finance the costs of production until such time as payment is received from the customer for whom the work was accomplished. Customer billings are computed to attempt to meet the ideal situation of a no-profit no-loss operation.

The inherent elasticity of this funding arrangement makes much simpler and more feasible the financing of peak or cyclical work loads and also permits (and requires) controlled retrenchment and cost control during comparatively slack periods.

The Navy Industrial Fund is not subject to quarterly

or annual limitations and has not been subjected to the apportionment process by the Bureau of the Budget as is the case with the revolving-type stock funds. Management responsibility is centralized at the activity level in the person of the activity commander.

Double-entry, accrual accounting is incorporated in each system and is designed to meet the specific needs of the particular operation. Costs are defined to include the costs of direct materials, direct labor, other direct costs, operating overhead and administrative overhead, but to exclude costs of military pay and depreciation. Capital machinery, equipment, buildings and other real property are provided from appropriated funds and are not taken up as Industrial Fund assets nor is any rent paid by the fund to reimburse the providing activity for usage.

All accounting systems under the Navy Industrial Fund are designed primarily to provide management with the information essential to guiding economical and efficient operations. Emphasis is placed on management establishment of predetermined costs and selling prices based on firm standards for labor, material, overhead and other costs.

Hand-in-hand with this, sound budgeting, analysis of variances and fingertip control of operations are encouraged so that problem areas are quickly brought to light and under the influence of appropriate corrective action.

In most Industrial Fund applications, the financial management system is quite similar to what one might expect to find in a comparable type civilian enterprise under a capable and enterprising management.

CHAPTER III

APPLICATION OF INDUSTRIAL FUNDING TO THE CLOTHING FACTORY

In conformance with the Industrial Fund Regulations of the Department of Defense, the Commandant of the Marine Corps selected the Clothing Factory as the only installation under his control which would be amenable to such operation.

Necessary surveys and plans were made and the factory commenced actual operations under the Navy Industrial Fund on July 1, 1953.

The factory operates under the management and technical control of the Quartermaster General of the Marine Corps exercised through the Commanding General of the Marine Corps Supply Activity. The commanding general has appointed his chief of staff as coordinater for Navy Industrial Fund activities.

Initial working capital was provided to finance the operations of the factory in the amount of $1,300,000 in cash plus inventories then on hand in the amount of $276,400. However, the factory also was required to recognize as an initial liability the annual leave accrued to its civilian employees in the amount of $304,000. Of the initial capitalization, $400,000 has since been returned to the Naval Industrial Fund, leaving the present capital at about $900,000.

The functions of the Factory subject to Navy Industrial Fund financing are:

1. Manufacture of textiles, leather and similar materials into finished clothing and equipment products.

2. Modification and/or alteration of existing items, as required.

3. Development and testing of pilot designs and master patterns and establishment of material usage allowances for items manufactured by the Clothing Factory or by commercial contractors.

4. Maintenance of experimental production lines, testing of mass production techniques and maintenance of a "mobilization reserve" of manufacturing know-how and readiness for expansion.

5. Provision of advice on preparation of specifications and manufacturing methods to be used by commercial manufacturers.

6. Provide "yardstick" cost data for evaluation of commercial procurement.

7. Perform other manufacturing, modification and repair work, as authorized.[8]

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[8]U. S., Department of Defense, Charter, Authority for Use of Navy Industrial Fund in Financing the Operations of the Marine Corps Clothing and Equipment Factory. Office of the Assistant Secretary of Defense (Comptroller), 30 June 1953.

CHAPTER IV

FACTORY OPERATIONS

The type, variety and quantity of clothing and textile items produced by the Clothing Factory is illustrated by the chart-type listing included in Appendix III. It may readily be seen that the variety is rather wide and that the other armed services are well represented as ultimate consumers. It might further be noted that only items peculiar to military uniform usage are included, and interchangeable military-civilian items such as underwear and stockings are not included. This fact, in addition to implying some evidence as to the procurement policies of the Single Manager, rather succinctly points up both the need and the advantages of having a military-controlled agency to produce such items both as an immediate and responsive mobilization reserve potential and as an in-being control on "outside" costs, specification and production methods.

Total sales of the Clothing Factory average about $5 million per year, or about five times the amount of the net government investment represented by the factory. This $5 million figure includes only the direct labor, findings material and overhead charged to the customer, who generally furnishes to the factory all the primary materials required for the

garments to be produced. If the value of such primary materials (about $6 million per year) is considered, the gross value of the annual production of the Clothing Factory is about $11 million.

Employment may be stated at approximately 1000, depending upon what type of statistics are used.

1. The estimated fiscal 1958 labor requirement is:[9]

Direct Cost (civilian)	660	man-years
Manufacturing Expense (military)	3	" "
Manufacturing Expense (civilian)	311	" "
General and Administrative Expense (civilian)	55	" "
Total	1029	man-years

2. The authorized and actual strengths as of January 20, 1958 are:[10]

	Ceiling	On Board
Civilian Personnel		
Graded	75	71
Ungraded	940	934
Military Personnel		
Officer	3	3
Enlisted	1	0
Totals	1019	1008

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[9] U. S., Department of Defense, Management Survey Program Data [on Marine Corps Clothing and Equipment Factory], 27 January 1958.

[10] Civilian and Military Complement Record, Marine Corps Supply Activity (Philadelphia, 20 January 1958).

The factory payroll for fiscal 1958 is estimated at $3.7 million, exclusive of pay of military personnel, and the total accrued expenditures for the year are estimated at approximately $5 million.[11]

From the above data it may be gathered that not only are employment costs a major factor in the overall factory operation, but that, since total now employed are near ceilings allowable, production peaks can only be met through use of overtime employment. In turn, this points out the fact that production planning must aim at a near-level work load in order both to stay within ceilings and to keep the unit cost of production from soaring above standards.

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[11] Management Survey Program Data, loc. cit.

CHAPTER V

CUSTOMER RELATIONSHIPS

The Clothing Factory has one prime customer who engenders practically the entire workload of the clothing factory - the Single Manager (Military Clothing and Textile Supply Agency). Three other customers provide a limited number of orders; they are, generally, the Permanent Marine Corps Uniform Board and the Air Force Academy (experimental work), and the Marine Corps Band (band uniforms).

While the Single Manager could conceivably procure all its requirements from commercial sources, it has become the practice of the agency to rely upon military clothing factories to meet "crash" requirements, produce small run items and special-order clothing for enlisted personnel who cannot be fitted with standard items, perform pilot line and experimental work and to complete defaulted contracts. Such work, understandably, is not normally considered inviting to commercial contractors except at exorbitant costs which would have to be charged to meet unforeseeable contingencies and to cover the additional risks not usually inherent in the normal clothing production process.

Workloads are obtained from the Single Manager in the following manner:

1. In April of each year, Clothing Factory scheduling personnel meet with the project order officer of the Single Manager to review the agency's total requirements for the ensuing fiscal year and to determine what segments will be manufactured by the Clothing Factory.

2. Later changes to the initial program may be initiated by the Single Manager and result in either an amendment to the original program or, in the case of major changes, require the rescheduling of the entire program.

3. All schedules and changes thereto are completely reviewed by both staff and line operating personnel prior to final acceptance by the Clothing Factory.

As it is presently operating, however, the production program of the Clothing Factory appears to be governed more by change-orders from the Single Manager than by the originally agreed-upon annual program.

Between July 1 and December 31, 1957, the Clothing Factory received 73 project orders and 181 amendments thereto from the Single Manager. The factory started the fiscal year with a workload composed of 20 items, but in November emergency requirements of the Single Manager forced a major revision of the entire program resulting in a workload consisting of 56 items. Another major revision of production schedules was caused in December by the cancellation of large orders for three major items.

The fact that the Single Manager Agency commenced full-scale operations only on July 1, 1957 may have a definite

bearing on such matters, and improved buyer-planning may be expected in the future.

CHAPTER VI

PRICING

Project orders and other procurement directives received by the Clothing Factory from the Single Manager contain the following information:

1. Item and quantity to be manufactured.
2. Tariff of sizes (size distribution within the overall quantity of each item ordered).
3. Material to be furnished as GFP (government furnished property, or material which will be furnished by the customer).
4. Applicable specifications (and exceptions to such specifications, if any).
5. Packaging and shipping instructions.

To this information, the Clothing Factory adds such other planning data as:

1. Design of garment (new or rerun).
2. Type of work involved.
3. Cost centers which will perform work.
4. Detailed production schedules.
5. Material allowances (for findings only).
6. Packaging labor requirements.

7. Estimates of direct labor involved for cutting, sewing, pressing, etc. is also furnished in case of new items.

All this information is then forwarded to the Fiscal Division of the Marine Corps Supply Activity where a recommended unit selling price is computed, consisting of the combination of the following elements:

1. Direct labor costs.
2. Material costs (factory-furnished findings to be used in addition to GFP - see Glossary).
3. Other direct costs applicable, if any.
4. Factory overhead costs.
5. General and administrative overhead costs.
6. Profit or loss factor. (Added to insure that the factory breaks even over a period of time. The amount of the profit or loss factor applied to costs is dependent upon the balance of the retained earnings account.)

If the Clothing Factory concurs with the reasonableness of the above estimates, the customer is notified of the acceptance (or rejection) of his order. (A flow-chart of the pricing process is provided as Appendix V.)

To date, this procedure has proved acceptable to the Single Manager, and only one Clothing Factory quotation has been rejected as being too high, although on several occasions

price quotations have become a matter of bilateral discussion prior to acceptance by the agency.

The Single Manager then gives the factory a firm order in the form of a project order which, in addition to the foregoing information, cites appropriation data and sets a maximum dollar amount which may not be exceeded in subsequent factory billings. Subsequent to commencement of production, the customer is informed monthly of the status of his order as to quantities actually shipped compared with quantities scheduled.

Bills are rendered to the Single Manager bi-weekly, based on the quantities of items shipped multiplied by the predetermined unit selling price.

During fiscal 1957, 98% of all billings were based on predetermined prices, the only areas not presently so covered being such miscellaneous activities as research and development and labor loaned.

The Fiscal Division makes constant comparisons between predetermined pricing and actual costs, based on direct labor and material usage data furnished by the factory plus overhead rates applied in relation to direct labor hours involved in producing each product. Predetermined pricing policies, procedures, and statistics are reviewed quarterly and revised as required.

If an upward revision of the predetermined price should indicate that delivery of the full quantity ordered by

the Single Manager would result in exceeding the dollar amount cited in his project order, two courses of action are open to the factory:

1. The Single Manager may be informed of the facts and requested to increase the amount of funds available.

2. The overall quantity of items ordered may be reduced so as to remain within the dollar limitations set, and the Single Manager notified of the change.

Both of the above methods have been used in the past, the choice in any individual case being made on the basis of the merits of the case as to quantities of dollars and items involved, availability of funds in the Single Manager's stock fund, time factors, etc.

Of course, a downward revision of predetermined prices creates no such problem, and, since the customer is informed monthly of all price changes, it is possible for the Single Manager to replan uses for any funds which would appear to be "unobligated" for this reason.

CHAPTER VII

PRODUCTION STANDARDS

For use in both initial sales and production planning and in computing predetermined selling prices, a comprehensive set of production standards have been established by the Clothing Factory. (The fact that firm engineered standards for about 80% of all production operations had been established prior to July, 1953 materially contributed toward a smooth transition to industrial fund operation.)

Material standards are developed by the Clothing Factory from specifications governing items to be manufactured. Once established and tested in actual performance, these standards provide accurate indicators of material usage per garment. Material standards are reviewed quarterly and are revised whenever necessitated by design changes, material substitutions or other causes.

All direct labor is covered by standards (as shown by the following breakdown) since such data are essential in predetermination of selling prices as well as for arriving at future operating schedules and personnel requirements.

Type of Standard[12]	% of Coverage
1. Engineered wage incentive	91.1
2. Engineered day-rate	1.4
3. Historical data	5.5
4. Estimated standards (used only for straight-time operations)	2.0
Total	100.0

Labor standards are also reviewed periodically and are revised whenever any significant change occurs in the basic factors used in their initial computation.

Overhead standard costs are based on one or more of the following measurement criteria:[13]

1. Clerical labor and machine accounting services - work measurement program.

2. Utilities costs - predetermined rates established for the Supply Activity as a whole and based on local or Headquarters Marine Corps policies.

3. Procurement, industrial relations, fiscal, disbursing, and other similar service charges are based on past performance and/or ratios of personnel employed by the Clothing Factory to total Activity employment.

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[12] Ibid.

[13] U. S., Department of the Navy, Office of the Comptroller, Navy Industrial Fund Handbook for Marine Corps Clothing and Equipment Factory (NAVEXOS-P1279).

Such overhead standard costs charged to the factory as a whole are distributed among production cost centers in proportion to direct labor hours budgeted for the period concerned. These standards are also subject to periodic review, but are adjusted only when radical changes occur in the overhead costs or in the level of production.

As the production process is being carried on, a number of reports are submitted periodically to responsible members of management, both line and staff, showing budgeted (standard) data, actual performance and variances. The following list is representative of such reports:

Daily and Weekly Production Reports

Weekly Personnel Utilization Analysis

Monthly Budget Variance Report

Monthly Shipping Variance Report

Monthly Unit Cost of Product Report

The Clothing Factory has found that a number of advantages have accrued through use of standards in budgeting. For example:

1. Controlled labor and material requirements permit more accurate planning, scheduling and use of manpower, equipment and material resources.

2. Engineered wage incentive standards have permitted the factory to accomplish additional work without increases in manpower or equipment. In addition, increased earnings have created improved worker morale.

As a supplement to engineered labor standards, a job evaluation study covering almost all employees was recently completed after three years of data-gathering and analysis. The primary purpose of this program is to insure that employees receive comparable pay for comparable work, an important factor in an industry using a multitude of skills and degrees of responsibility in such areas as cutting, sewing, finishing and pressing operations.

In addition, job evaluation has made possible more effective (and more equitable) application of engineered method, time and motion standards as well as more effective utilization of the skills and capabilities of employees.

Barrington Associates, Inc., was utilized as an outside consultant in the initiation of this program, which is believed to be the only one of its kind applied to any entire industrial activity within the Defense Department.

The evaluation work is now performed by a committee consisting of the head of the factory (chairman), the head of the production section, the immediate line supervisors involved, the shop committeeman whose shop is effected and a job evaluation specialist as well as a non-voting representative of the industrial relations office.

The evaluation process has been fully explained to all employees and has met with wide acceptance and approval by those affected.

CHAPTER VIII

BUDGET FORMULATION

Generally speaking, the Clothing Factory has two budgets - one is the master budget (or A-11 Budget) which is submitted, through the chain of command to the Bureau of the Budget; the other is the operating budget, used primarily for internal control of operations.

Both budgets are based upon the production schedule for the ensuing fiscal period, and the source information used in formulating the master budget is also used, and supplemented, in formulating the operating budget. Otherwise, the formulation processes for both budgets are nearly identical and differences are apparent only in minor details.

Fundamentally, the factory budget formulation process consists of the following chronological steps:

1. The Commanding General, Marine Corps Supply Activity, establishes policy and provides instructions based, to a great extent, upon budget guidelines received from the Commandant of the Marine Corps. Such policies and instructions are generally promulgated through the Activity comptroller.

2. The Clothing Factory prepares material, personnel

and overhead requirements based on the anticipated workload.

3. The Fiscal Division reviews and consolidates estimates and prepares the master factory budget (which is approved by the Commanding General and submitted, via the Commandant of the Marine Corps, the Navy Comptroller and the Department of Defense, to the Bureau of the Budget).

Budget preparation is coordinated by the Activity comptroller, whose duties include the following:[14]

1. Preparation and issuance of guide-lines and policies established by the Commanding General.

2. Design and issuance of budget forms and detailed instructions for preparation.

3. Furnishing of historical data, as required.

4. Determination of general and administrative overhead expenses chargeable to the Navy Industrial Fund.

5. Holding necessary conferences to aid in resolving internal estimating and budgeting problems.

6. Predetermination of selling prices (as previously described).

7. Preparation (in final format) of both the

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[14] Ibid.

internal budget and the master budget for approval by the Commanding General.

8. Accomplishment of similar functions in the preparation of any budget revisions.

Both the master budget and the operating budget are prepared on an annual basis, broken down by quarters, and are submitted prior to April 15 of each year. The operating budget is revised quarterly, and the new data ~~is~~ are submitted by July 15, October 15 or January 15, as applicable.

The budget review at the Headquarters, Marine Corps, level is conducted only in terms of broad objectives, with most of its emphasis in the area of predetermined prices. Since the Clothing Factory is the Marine Corps' only industrial fund operation, no special organization has been required at the Headquarters level for review, analysis or coordination.

Some of the difficulties which have been encountered in budget execution are:

1. Revisions to production schedules necessitated by changing service requirements.

2. Changes in basic wage scales.

3. Changes in product design.

4. Transition to the single manager procurement concept during fiscal 1958.

However, internal procedures for gathering information and computing estimates are constantly reviewed in order to

overcome or minimize some of these difficulties. In addition, it is expected that Single Manager operations and coordination will improve after the initial installation and "debugging" period is over.

CHAPTER IX

ACCOUNTING SYSTEM

The Defense Department Regulations governing industrial funds require that, "each type of establishment shall have an accounting system 'custom-built' for its operation. This system shall observe the accrual basis of accounting and employ the double-entry method of bookkeeping."[15]

The Clothing Factory's accounting system has been designed to fulfill this requirement. Furthermore, as required, it is correlated with the established fiscal procedures of the Marine Corps and the Comptroller of the Navy. Generally, it is consistent with accepted industrial cost accounting principles and practices.

An outline of the chart of accounts is included as Appendix VI. Principal features of the system are that:

1. Appropriate cost centers have been established and are segmented in conformance with functional line operating control sub-divisions within factory branches. (See also Appendix II).

2. In the case of regular stock products, standard

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[15] Industrial Fund Regulations, loc. cit.

costs are used throughout the manufacturing control accounting cycle and memorandum records only are maintained to record actual costs. Cost of goods sold, however, is computed by using a ratio of actual to standard cost.

3. In the case of other than standard products, actual costs are recorded throughout the cycle.

4. Basic accounting control consists of a general ledger and appropriate subsidiary ledgers. (See Appendix VI, Chart of Accounts).

5. Books of original entry for all basic transactions consist of the following:

Cash Receipts Journal
Cash Disbursements Journal
Sales Journal
Purchase Journal
Material and Supply Distribution Journal
Factory Labor Distribution Journal

6. All routine internal adjustments resulting from accruals, cost distributions, spoilage costs, etc. are recorded monthly through the use of standard journal vouchers. (This makes possible the preparation of accounting statements directly from ledger balances without the use of working trial balances, work sheets, etc.) Non-routine adjustments are recorded through the

use of general journal vouchers (or, in the case of memorandum accounts, memorandum journal vouchers).

7. Particular emphasis is placed upon accounting control in such areas as: Procurement, receipt, storage and usage of materials and supplies; Timekeeping, payrolls, and labor distribution; Customer billings; Cash receipts and disbursements.

8. Rigid budgetary controls are maintained with respect to income, costs and expenses and cash receipts and disbursements.

9. Memorandum accounts are maintained for recording statistical data which are used for planning or estimating purposes but do not affect in any way costs chargeable to the customer under the terms of the Clothing Factory Charter. Examples of such accounts are Machinery and Equipment, Depreciation, Reserve for Depreciation, Military Pay and Allowances and Building Occupancy Expense (imputed rental value).

10. All cost accounting entries are posted weekly.

11. Although straight labor time is charged as a direct cost, overtime or other premium pay is charged to factory overhead. Thus, the particular job which happens to be scheduled outside of normal working hours is not unduly penalized, but the extra costs incurred are spread equitably over the entire workload.

In general, it may be stated that the Clothing Factory's accounting system has been well tailored (no pun intended) to the needs of its budgetary system and especially to the concomitant needs of the predetermined pricing system. The entire budgetary and accounting system is ultimately based upon the production planning procedures and, in turn, is aimed at providing accurate and reliable data for future production planning.

CHAPTER X

EMPLOYEE RELATIONS

Understandably, the development and application of comprehensive production standards coupled with strict budgetary controls and intensive cost-consciousness has at times incited a certain amount of antagonism and distrust toward management on the part of the production employees.

While relations with the employees union, the American Federation of Government Employees, have remained good throughout the period in spite of minor frictions, the management has initiated a factory-wide "human relations" program.

The purposes of this program are to dissolve the labor-management barriers and to elicit as much employee cooperation as possible in support of future management improvement procedures.

The first step in the program was a continuing campaign to keep employees more completely informed as to factory operations, production schedules, work progress, mutual labor-management problems and the place of the employee in the "big picture".

Some of the media used in support of the program are a monthly newsletter, an employee council, illustrated pamphlets and conferences of supervisory personnel.

The monthly newsletter - entitled Factory Facts - consists usually of two pages of copy covering exceptional human interest stories and various items of information applicable to all employees. It has proved an effective means of informally reaching nearly maximum coverage of all personnel.

The employee council has been used primarily as a means of disseminating information downward through an informal chain of communication. Elected employee representatives meet monthly with top management officials and are shown up-to-date operating charts and are given much detailed (and authentic) information as to factory progress, production schedule changes, anticipated workload, etc. The council has been of assistance to management in solving many problems and has proved very reliable and effective in carrying the word back from these meetings to their "constituents" in the shops.

Illustrated pamphlets have been distributed from time to time to meet specific requirements. For example, one pamphlet contained a simplified description of the job evaluation program, its purpose and expected advantages to the individual employee. Another covered the absenteeism problem and its effects on operator earnings as well as its disruption of production schedules.

Supervisory personnel are tied closer to top management through weekly conferences at which detailed data is given out as to plans, programs and requirements. At the same time,

individual supervisors are encouraged to present their problems for discussion. These conferences have resulted in ~~much~~ improved two-way communications and have done much to improve the status of supervisors in the eyes of their subordinates, since they can now be relied upon to have or to get the "latest word" on any pertinent subject.

A Family Day was recently observed when all employees were encouraged to bring their families and friends to the factory to see the various operations in which the "breadwinners" were engaged. Each shop prepared displays and samples illustrative of the work performed, and participation in the open house program was gratifying.

Intensive effort has been expended on efforts to humanize rather than mechanize problems pertaining to individual employees. For example, at one time employees who failed to meet their daily production quota automatically received a letter proposing separation. (This letter, incidentally, was prepared as a by-product of routine daily production data processing by the machine record installation.) This procedure has been modified so that now the employee's immediate supervisor is informed of any failure to meet a quota and every effort is then made to help the employee through retraining, reassignment, relief of personal problems, or other action that appears to be indicated. Separation is now proposed as a last resort after all efforts to assist the employee have failed and after full attention has been

given to each individual case by all line supervisors concerned up to and including the officer in charge of the factory himself.

A comprehensive training program receives continuous management attention and support. While employee training is almost entirely of the on-the-job type, a series of bi-weekly classes have been set up for supervisors at all levels. These classes concentrate on the skills and qualities desirable in a good supervisor and are taught predominantly through the use of the case method.

In addition to engendering a noted increase in enthusiasm on the part of supervisors in the conduct of their duties, the classes have also provided an area in which supervisors have been able to exercise and strengthen previously latent leadership traits and characteristics.

A continuing campaign has been carried on to combat absenteeism. As in any production-line type operation, it is essential that all job stations be filled when the line is in operation and that each individual employee be highly trained or skilled in his particular specialty.

Unauthorized absenteeism is the plague of the system in that the one or two operators who don't show up for work require a major juggling of the others who are present, resulting in mis-assignments, bottlenecks and retraining requirements -- all of which decrease the individual employee's incentive earning potential on one hand and run up the management's direct and

indirect costs on the other.

In an effort to find the causes of absenteeism and to limit the practice to a practical minimum, the factory management has instituted a comprehensive program which includes:

1. Constant publication of the status of absenteeism through the placement of charts and other data in conspicuous locations in the shops.

2. Continuous emphasis on absenteeism problems at supervisory and employee council meetings.

3. Requiring an employee who calls in with an excuse of sickness to talk with his or her supervisor rather than the personnel office. This practice has proved advantageous in that the supervisor can get information as to when the employee plans on returning and at the same time becomes more familiar with the employee's individual problems.

4. Requiring supervisors to call upon continued or habitual absentees to learn of problems and, if possible, assist in alleviating them.

5. Initiation of a program of research into the basic causes for absenteeism to serve the two-fold purpose of helping reduce the problem on one hand and of providing more reliable budgetary and production planning factors on the other.

While most of the results of the human relations

program have been intangible, the management feels that much progress has been made in the proper direction and that a suitable foundation has been laid upon which to build a sound and continuing program for future development of employee-management teamwork.

CHAPTER XI

ACCOMPLISHMENTS UNDER THE INDUSTRIAL FUND

Since initial implementation of industrial funding at the Clothing Factory in 1953, the management has made constant efforts to increase the efficiency of operations. This statement is not meant to imply that only industrial funding can encourage efforts toward efficiency, but it is nevertheless true that the emphasis upon predetermined prices, material and labor standards and sound budgeting does tend to make all responsible personnel more cost-conscious and perhaps more amenable to the adaptations necessary in applying improved procedures.

Some of the savings accomplished as a direct result of budgetary studies and analysis under the industrial fund are listed here as examples of the types of improvement so far realized:[16]

Improvement	Estimated Annual Savings
1. A study of packaging procedures made possible a reduction in the number of packers	$ 43,680

[16] Management Survey Program Data, loc. cit.

2. A review of the number of janitors employed resulted in a personnel reduction. $ 58,715

3. A study of internal and external security requirements resulted in a reduction of the civilian guard force. $ 37,994

4. A study of supervisory assignments resulted in the elimination of the "snapper" classification. Employees affected were reduced in status but retained in the production work force. $ 88,879

5. Improved mechanized accounting procedure (match-merging process) made possible the elimination of tub files and certain manual collating-filing operations. $ 10,400

6. A reorganization of the Industrial Division and reassignment of functions made possible the elimination of one supervisory and several clerical positions. $ 15,500

7. A revision of garment fabrication methods resulted in adoption of a number of simplified procedures. $ 26,155

These estimated annual savings total $281,323, an impressive figure for a plant operating on an annual budget of $5 million. Of course, the additional accounting burden generated by industrial fund requirements partially offsets some of these savings. But, the entire amount charged to the factory (as incurred by the Fiscal Division) for industrial fund budgeting and accounting services during fiscal 1957 aggregated only $62,825.

Cursory examination of the Income Costs and Expenses Statement included as Appendix IV indicates that actual data has closely approximated budget estimates during the first half of fiscal 1958. It is also apparent that direct labor and material costs together comprise the greatest portion, percentagewise, of the cost of goods sold. It is precisely these two cost elements that are most amenable to control under the industrial fund concept as applied at the Clothing Factory. Further, continuous and critical examination is also constantly directed at the third major expense item: factory overhead costs.

In summary, it might fairly be stated that the Navy Industrial Fund at the Marine Corps Clothing Factory has aimed at efficiency through reduction in the cost of the product it sells. Its production procedures and its budgetary and accounting systems have been custom built with this objective in mind, and, to date, the results have justified the means and efforts expended.

CHAPTER XII

ADEQUACY OF BUDGET PROCEDURES

The key to past, present and future successful operations of the Clothing Factory is as much attributable to sound budgeting as to any other single factor.

Budgeting is of such critical importance for two basic reasons: First, the factory is a government agency and is subject to normal budget review at higher echelon in regard to matters of policy and content of the work program; second, the factory is operating on a strict "profit and loss" basis as an industrial-type operation - a basis which requires sound budgeting for purposes of predetermination of costs, overhead distribution and selling prices.

The Clothing Factory budget can best be analyzed as to adequacy by comparing it with the "Twelve-Inch Rule of Budgeting", a commonly-accepted standard of quality for governmental or commercial budgeting practice.

The requirements of the "Twelve-Inch Rule" (and related comments) are:

<u>One - A well planned program of work</u>. The Clothing Factory's work program is soundly based on the established requirements of a nearly independent agency (so far as the Marine Corps is

concerned) - the Single Manager. Therefore, it might be considered that the objectives and their need have been justified by the consuming services in their maintenance and operations program budgets, the Single Manager in his stock fund budget and finally by the Clothing Factory budget. This triple-threat justification process is almost guaranteed to separate any chaff from the whole grain of concrete requirements.

As for programming with regard to scope, scale, methods, timing, etc., these matters are for the most part soundly considered in both the production scheduling phase and the predetermination of costs and prices. Both of these phases are germane to the formulation of the final budget.

Two - A reliable forecast of services and things needed. Here again both the production scheduling and predetermination of costs and prices require searching analysis of actual needs for services and things in support of the overall work program.

A sound base for estimates is provided in the standards developed for labor, material and overhead, and the totals are arrived at only after full consideration of the volume and nature of work contained in the entire program.

Three - Accurate estimates of financial obligations. As a result of the use of predetermined material, labor, and overhead standards for production scheduling, it becomes a simple matter at the Clothing Factory to "price out" the schedule and arrive

at accurate estimates of financial obligations.

Furthermore, as a result of the internal control system, management can feel sure that estimates covering future periods will be reasonably well adhered to in actual accomplishment. Therefore, the overall budget presents a more accurate reflection of the future picture than is often the case in governmental practice.

Four - Internal balance and consistency. Constant operating control and analyses of budget variances are an effective method of avoiding cross-purposes within the factory's operating program and of insuring that all means employed are dove-tailed in the furtherance of the overall goals of the production program.

In addition, internal balance and consistency is further insured by the fact that the overall program is ultimately controlled by the customer, who must be assumed to be unbiased by considerations other than price, quality and delivery terms as contrasted among the many sources of supply competing for his business.

Five - Conformance with Presidential (and Congressional) policies. The Clothing Factory, as a segment of the overall Navy Industrial Fund, operates in strict compliance with Title IV of the National Security Act,[17] thus assuring conformity with Congressional policy.

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[17] National Security Act Amendments, loc. cit.

Presidential (Executive Branch) policy is expressed primarily in the Regulations Covering the Operation of Working Capital Funds[18] published by the Secretary of Defense, and, of course, adhered to by the factory.

Year-to-year (and more frequent) changes in policies are expressed to the factory management in a consistent and timely fashion through the standard Marine Corps system of communicating such matters downward through the chain of command, especially, in this case, through the media of budget guidelines from the Commandant of the Marine Corps and from the Commanding General of the Supply Activity.

The various levels of the chain of command that review the master budget insure that such expressed policies are consistently adhered to.

Six - Consideration of long-range requirements. At first glance, it might appear that the long-range program of the Clothing Factory could hardly extend beyond the 15-month planning and production cycle.

However, this is not the complete case. As with any other segment of the military establishment, the ultimate long-range goal must be preparation for war. The Clothing Factory's long-range goals in this regard are to develop and maintain at all times a mobilization reserve of skills, facilities and

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[18] Regulations Covering the Operation of Working Capital Funds for Industrial and Commercial-type Establishments, loc. cit.

management capabilities equal to the task of spearheading a campaign (in close conjunction with the other textile industries, of course) to clothe and equip the men and women of the United States armed forces.

Seven - Comparison of past and current budgets. Financial and operating control policies of the Clothing Factory under the industrial fund concept require not only an annual comparison of the current budget with its predecessors of prior years but also a constant daily comparison of results with the content of previous budgets.

These facts tend to insure that comparability of successive budgets will be maintained (and indeed clarified, where necessary) and that adequate appraisals of content are carried out.

This system, being operated on the "management by exception" principle, also tends to further insure that adequate appraisal is directed at any basic changes in programs that might be injected from time to time.

Eight - Sources of finances. The sources of finances are probably the most important single aspect of industrial fund operation, since continued existence as an operating entity is predicated on an ability to extract adequate payment from a customer in return for goods and/or services rendered to him.

While the problem is somewhat simplified in the case of

the Clothing Factory because it has a single major customer and only two or three minor ones, it is certain that much attention is focused upon maintaining satisfactory fund sources not only from the aspect of insuring customer satisfaction but also from the standpoint of encouraging a smooth and steady influx of "new" working capital by employing adequate delivery schedules and billing procedures.

Other sources of funds such as sale of clippings, sweepings and excess findings and other material are also throughly explored and utilized where appropriate.

Nine - Careful expression of the proposed program. Since the work program of the Clothing Factory changes but little in overall scope or content from year to year, this particular budgetary requirement is of relatively less importance than usual.

However, careful attention has been devoted to developing an adequate format and structure for budget presentation and to the necessary justifications which back up the numerical dollar data.

Ten - Clear and factual explanation. Here again, the continuity of the basic program from year to year tends to minimize the importance of this requirement.

But all major changes are well justified through use of workload data, statistical evaluations, comparisons with industry standards, projections of trends and other accepted means of

presenting objective facts in a convincing manner.

Eleven - Wide participation by operating personnel. It has been the constant endeavor of the management of the Clothing Factory to insure wide participation of operating personnel in both budget formulation and execution.

Indeed, the entire production planning and internal control systems are predicated upon 100 per cent participation of line operating supervisors at all levels, constant attention to budgetary data by staff personnel and, through use of an incentive wage system, the conscious participation of the production operators themselves.

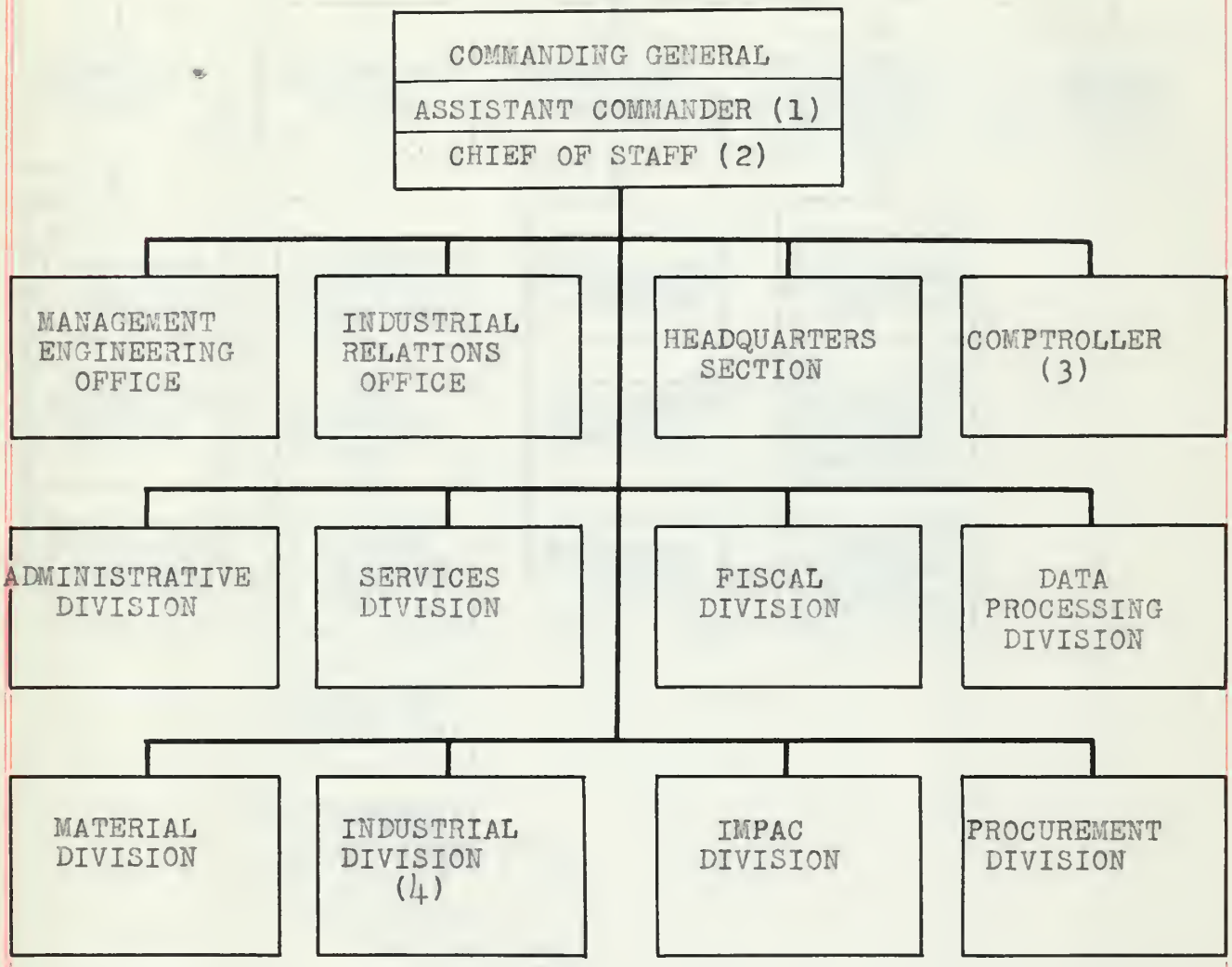
Twelve - Active direction by top executives. Since the budget is used as the almost sole means of expressing and controlling the Clothing Factory's work program, the top management has little choice but to participate fully in its development and execution.

The officer-in-charge of the factory accepts full responsibility for his budget, and it is probable that his ~~overall~~ performance is judged primarily upon the sound formulation and execution of an adequate budget as an expression of the overall work program of the organization.

For the above reasons, it is believed that the budgetary program presently in effect at the Clothing Factory is entirely adequate in all respects.

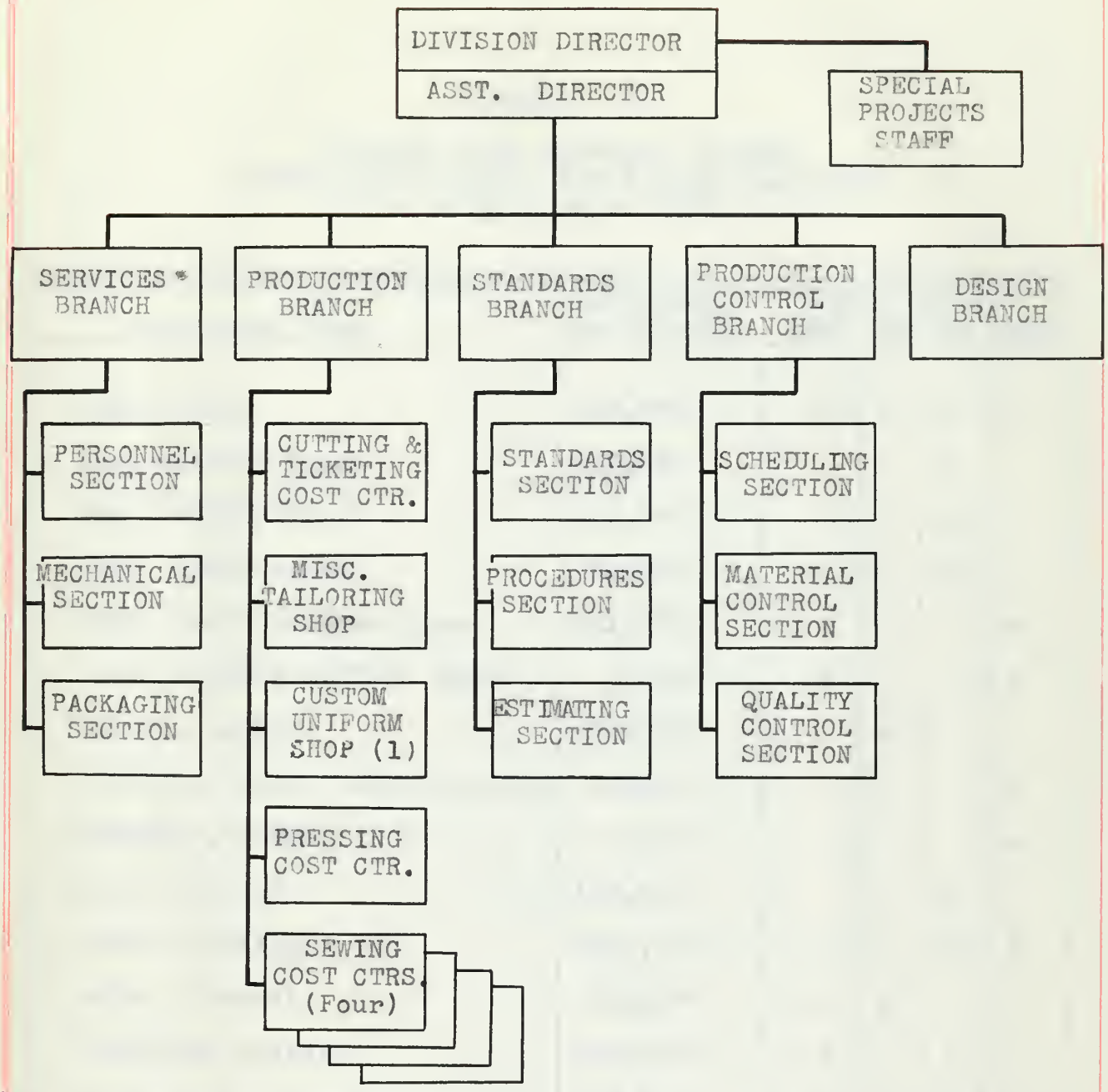
APPENDIX I

ORGANIZATION CHART
MARINE CORPS SUPPLY ACTIVITY
Philadelphia, Pennsylvania



Notes: (1) Coordinator, Supply Inventory Control (IMPAC) Activities
(2) Coordinator, Navy Industrial Fund Activities
(3) Comptroller is also Director, Fiscal Division
(4) Marine Corps Clothing Factory Comprises Industrial Division

Source: Marine Corps Supply Activity, Philadelphia, Pennsylvania, Activity Order 5450.7, Encl. (2), Chart 1.



Note: (1) The Custom Uniform Shop is not funded under the Navy Industrial Fund but under the appropriation Marine Corps Troops and Facilities.

Source: Marine Corps Supply Activity, Philadelphia, Pennsylvania, Activity Order 5450.7, Enc. (2), Chart 10.

APPENDIX II

ORGANIZATION CHART
INDUSTRIAL DIVISION
MARINE CORPS CLOTHING FACTORY

APPENDIX III

MARINE CORPS CLOTHING FACTORY
PRODUCTION SCHEDULE FOR FISCAL YEAR 1958
(as of 31 January 1958)

Production Item	Qty. Sched. for FY 1958	Using Service USMC	USN	USA	USAF
Bag, duffel	200,000	x	x	x	x
Cap, uniform types	222,000			x	
Cap, utility types	340,000	x		x	
Coat, field types	44,000	x		x	
Coat, man's uniform types	141,960	x			x
Coat, woman's uniform types	8,685	x			x
Jacket, working	28,920		x		
Overcoat, man's (modification)	10,310				x
Overcoat, woman's	3,370				x
Shirt, cotton	110,100			x	
Shirt, utility	309,750	x		x	x
Shirt, flannel	68,260	x	x		
Trousers, utility	270,230	x		x	
Trousers, uniform types	239,845	x	x	x	x
Uniform, tropical worsted	4,900	x			
Shooting coat	12,450	x		x	
Total value of material listed above:		$ 4,738,241.80			

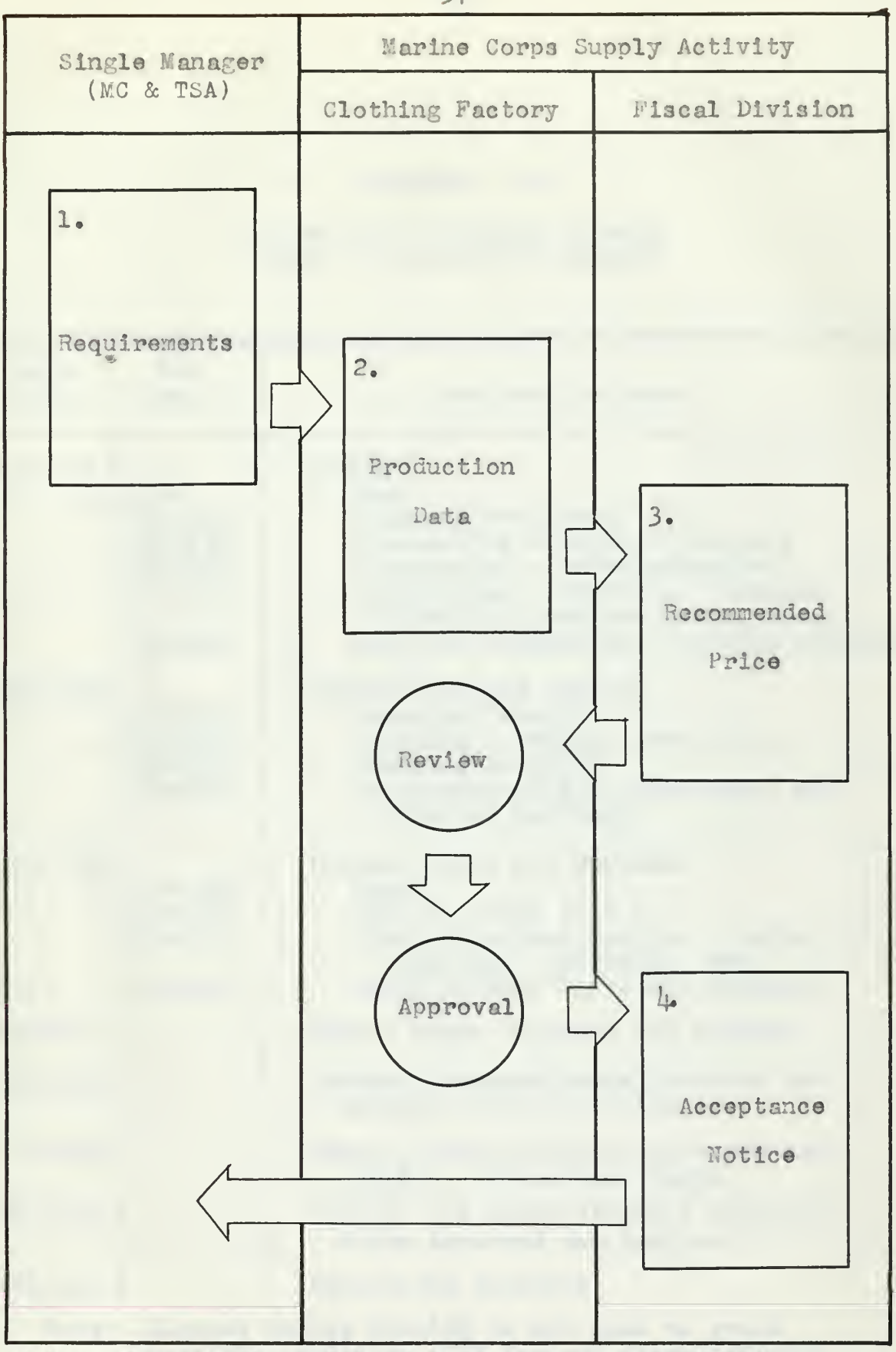
Source: Master Budget and Financial Statements of the Marine Corps Clothing Factory dated 31 January 1958.

APPENDIX IV

MARINE CORPS CLOTHING FACTORY
STATEMENT OF INCOME, COSTS AND EXPENSES
($000) 1 July - 31 December 1957

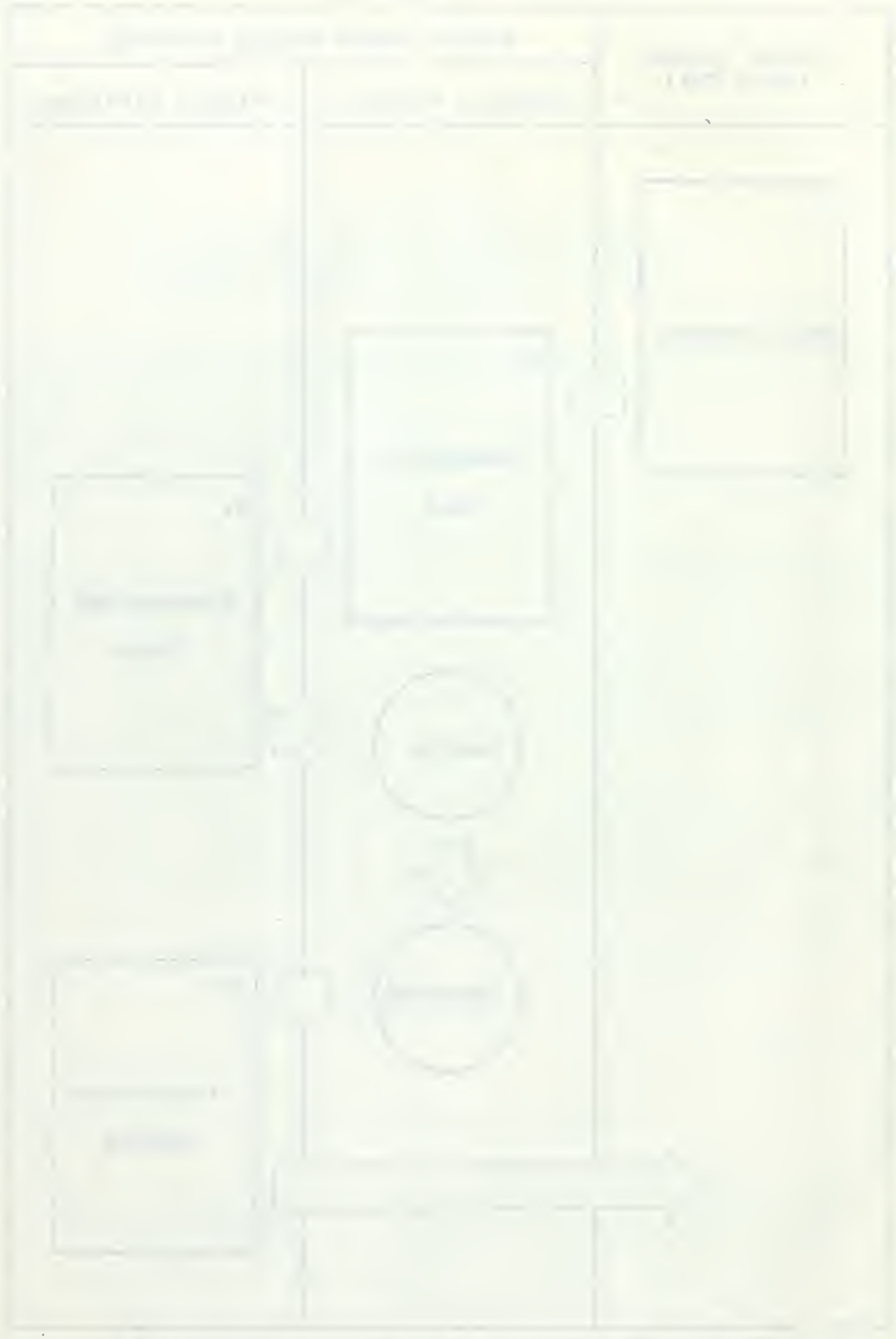
	Budget	Actual	% of Sales
Sales	2,148	1,998	100.0
Direct Material	260	249	12.5
Direct Labor	1,032	936	46.8
Other Direct Costs	9	10	0.5
Total Direct Costs	1,301	1,195	59.8
Factory Overhead Costs	734	714	35.7
General and Admin. Overhead Costs	145	135	6.8
Direct Service Labor and Overhead	4	11	0.5
Total Indirect Costs	883	860	43.0
Net Loss	35	58	2.8

Source: Commanding General, Marine Corps Supply Activity, Philadelphia, Pennsylvania, letter to Commandant of the Marine Corps, Assistant Secretary of Defense (Compt.) Bureau of the Budget and Department of the Navy dated 24 January 1958, Subject: Financial and Cost Statements for Marine Corps Clothing Factory.



Note: This chart is intended as a very generalized description of the pricing process rather than as a complete flow chart of all the steps involved.

APPENDIX V
DETERMINATION OF SELLING PRICES



APPENDIX VI

MARINE CORPS CLOTHING FACTORY
CHART OF ACCOUNTS (OUTLINE)

Basic Group	Sub. Group	Accounts Included
100-199		Assets
	110-	Cash
	120-129	Accounts Receivable
	130-139	Inventories - Direct Materials
	140-179	Inventories - Work-in-Process
	180-189	Inventories - Findings, Packaging Materials, Machine Parts, etc.
	191-199	Deferred Charges and Clearing Accounts
200-299		Liabilities and Capital
	210-219	Accounts Payable
	230-239	Accruals - Wages, Leave, etc.
	240-245	Clearing Accounts
	291-299	Investment of U.S. Government and Retained Earnings
300-399		Income, Costs and Expenses
	310-329	Sales
	340-369	Cost of Goods Sold
	380-389	Production Cost Credits - Sales of Clippings, Sweepings, etc.
	390-399	Other Income, Costs and Expenses
400-499		Direct Costs Incurred and Applied
500-599		Factory Overhead Costs Incurred and Applied - Service Units
700-799		Factory Overhead Costs Incurred and Applied - Production Shops
800-899		General and Administrative Overhead Costs Incurred and Applied
900-999		Memorandum Accounts

Note: Account Series 600-699 is not used to avoid possible confusion with factory organizational code (cost center) numbers.

APPENDIX VII

PROPOSED INDUSTRIAL FUND EXTENSIONS

As a result of the successful application of the Navy Industrial Fund concept and procedures at the Clothing Factory, a number of suggestions have been recently put forward to apply this technique to other ~~susceptable~~ areas within the Marine Corps.

The two areas presently under study as potentially the most susceptible to fruitful results are the repair shops at the Marine Corps Supply Center, Albany, Georgia, and the Marine Corps Supply Center, Barstow, California.

Both of these operations are large-scale industrial-type operations, in that they perform major overhaul, repair and modification work on major items of Marine Corps equipment. Both tactical-type and commercial-type equipment items are included, and many of the individual job orders are of a sufficient size or complexity to warrant the application of sound and thorough industrial engineering studies and estimates prior to commencement of actual shop work.

At present, both of these repair operations are funded under the Marine Corps appropriation for maintenance and operations (Marine Corps Troops and Facilities), and both supply centers have experienced difficulties in budgeting for long-time repair programs under the inherent limitations of annual appropriations.

In order to properly evaluate these suggestions for

extension of industrial funding to these areas, it would be best to consider the basic capabilities, limitations, benefits and detriments of the Clothing Factory's system as it applies to the factory's specific operations and attempt to evaluate the problems and efficiencies which would apply to the repair shop areas.

One of the primary facets of the Clothing Factory operation which makes it particularly amenable to industrial funding is the fact that the factory is engaged in only a single line of work - and a highly specialized line - the mass-production of clothing on an "assembly-line" basis. Ancillary orders for special-order or custom-made clothing are on an almost negligible scale.

This fact, in itself, greatly facilitates the planning and scheduling of work and the application of predetermined standards for labor, material and overhead.

On the other hand, the work of the repair shops is so varied and of such a "one-time" nature that each job would have to be considered as an almost separate entity and little if any production experience could be utilized in planning or executing successive jobs.

As a further example of the type of problem involved: most of the direct labor standards at the clothing factory are based on data supplied by the Singer Sewing Machine Company. These data were derived through measured time and motion (micro-motion) studies based on thousands of similar operations under

all conditions. (The ideals thus represented are tempered by a 20% allowance for non-productive effort.)

The repair shop production problems, however, are of quite a different nature. A job such as modifying the turret traversing assembly of an M-48 tank is an operation which does not readily lend itself to micro-motion study, nor is similar commercial data accurately applicable to such work.

Therefore, production scheduling, budgeting and predetermination of standards would be much more difficult and less amenable to accurate forecasting in the case of the repair shop than in the case of the Clothing Factory.

Another disparity between the two operations lies in the area of planning the overall workload for long periods of time, and in keeping the shops busy at a fairly even pace to allow reasonable application of overhead costs to the pertinent jobs in process.

The Clothing Factory receives its workload from the Single Manager. The Single Manager, in turn, has a large enough annual requirement to keep dozens of Clothing Factories going at full steam. Therefore, it becomes a relatively easy task to allocate enough of this workload to the factory to keep it going for a year at any desired rate of operations.

The work load of the repair shops, conversely, is generated in a much different manner. It derives mainly from three general sources:

1. Planned major overhauls of major equipment items after a predetermined amount of operation.

2. Expedient repairs to equipment which has broken down or worn out in service. This work is, in some cases, susceptible to pre-planning and, in other cases, is not.

3. Modification work caused by continuing technical advances on operational equipment or to correct deficiencies which have cropped up in service usage. In most cases, this work becomes urgently necessary within a short time after its initial conception and long lead-time is not generally available for planning purposes.

These workload planning difficulties could well result in a highly fluctuating program level, uneven overhead distribution and inequitable charges to the "customer" for work accomplished.

However, this difficulty could be partially overcome through the use of the best planning data available to establish an expected level of operations and the solicitation of similar repair work on a cross-servicing basis from the Army, Navy or Air Force to fill in major gaps in the program. Thus, a fairly even work-load could be established and maintained.

Late changes to the schedule, however, would still require rather drastic replanning and perhaps indefinite postponement of low-priority work in some cases and an urgent search

for "new business" in others.

In addition, prior to placing the repair shops under industrial fund operation, it would be necessary for the Marine Corps to closely scrutinize its entire maintenance, overhaul and repair program for major end items of equipment from the standpoint of establishing:

1. Some sort of overall "controlled maintenance" program for each classification of equipment, and within each classification, for each individual item.

2. A fairly definitive work schedule for at least 15 months in advance.

3. A reliable means of coordinating both of the above programs with the operating and training programs of the Fleet Marine Forces insofar as they affect the availability of equipment for repair and the generation of requirements for "reconditioned" items.

Headquarters, United States Marine Corps is now engaged in a number of studies directed toward these ends.

While the adoption of the industrial funding concept may be proven desirable, it should also be borne in mind that undue haste or overenthusiasm in wielding such a complex financial tool could well prove embarassing, if not truly dangerous to the mission of the Marine Corps.

This mission, after all, is basically concerned with providing for the defense of the nation rather than primarily

with running efficient repair shops, clothing factories or what have you.

On the other hand, if it proves feasible to adopt an overall equipment repair and maintenance program for the entire Marine Corps, and to execute this program in a reliable manner the entire organization stands to benefit in at least three ways.

First, equipment in the hands of using organizations should be expected to generally be in a higher state of efficiency.

Second, costs of equipment upkeep, which must be borne out of maintenance and operations appropriations, in any case, should be materially reduced.

Third, the present budgetary problems and work scheduling problems which arise from attempting to fit large multi-year programs into annual appropriations should be eliminated (and replaced by a much more flexible funding system which is more easily adapted to the requirements of the work program).

In addition, cross-servicing arrangements would be simplified and the modern and efficient facilities of the two Marine repair shops would be made more readily available to the other services on at least a part-time basis.

GLOSSARY

While an attempt has been made throughout this paper to avoid the use of technical terms, it is felt that a glossary of some of the terms prevalent in the garment trade may be of use to the reader who wishes to delve further into the subject.

Busheling - A procedure wherein garments are informally inspected after the completion of a series of operations and errors are corrected by returning the work to the defaulting operator or by action of the busheler, as applicable. Busheling is considered as non-productive direct labor.

Clippings and Sweepings - Waste material generated during the cut, make and trim fabricating process which is salvaged and sold to textile reprocessors.

Custom Tailoring - The process of producing garments to a set of non-standard specifications for a predetermined wearer (as differentiated from the usual production process wherein the garments are mass-produced to predetermined specifications and wearers are later found for the garments). At the Marine Corps Clothing Factory the custom tailoring process is used for the manufacture of ENLISTED SPECIALS, or garments ordered for enlisted men and women who cannot, because of unusual physical configuration, be fitted with standard-size garments.

Cut, Make and Trim - A term used to describe the entire

garment fabrication process; i.e. to cut the material to pattern, make (sew) it into a garment and, finally, trim off the dangling threads, etc.

Findings - Such items as buttons, thread, eyelets, tape, bindings, etc. which become components of the finished garment but which are not of sufficient importance to be classified as material.

Government Furnished Property (GFP) - A term used to denote raw materials furnished to the garment fabricator by the government purchaser of the finished garments. The term is used inter-changeably with government furnished material (GFM) or customer furnished property/material (CFP/CFM).

Material - The major raw material component(s) of the finished garment. For example: One speaks of a wool coat - the wool cloth is considered material as is also the nylon lining. But the buttons, thread, bindings, etc. which are also sewn into the coat are classified as findings.

Tariff Sizes - The distribution of sizes found to be normal among servicemen for any particular item of apparel. Such tariffs may be determined as a result of anthropomorphic surveys or by analysis of past issue data.

Ticketing - The process of printing and attaching an identification tag to each piece of cut material. The tag identifies the type and size garment of which the piece is a component and often also indicates the routing through the

production shop. However, the primary purpose of the ticketing procedure is to facilitate shade control, that is, to insure that an entire garment is made from pieces of material cut from the same bolt of cloth, since no two bolts of cloth are identical as to exact color shade.

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